ASPECTS CONCERNING THE BIOCHEMICAL MODIFICATIONS DURING *MUSCEL* CREAM CHEESE MATURATION

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Abstract: The scaled cheese has a very important and old tradition in Romania. It is prepared after a special technology, and then follows maturation in certain conditions assuring its specific sensorial characteristics. In this study a series of analysis were made on the fresh product and during the maturation, watching the modifications that took place.

Keywords: *maturation, biochemical process, scaled cheese, total nitrogen, soluble nitrogen*.

INTRODUCTION

Muscel cream cheese is a part of the scaled cheese. This is prepared after a special technology that consists in scalding at a temperature of 72 - 80^0C the matured green ewe cheese obtained from cow milk and the maturation in certain temperature and humidity conditions.

During the maturation process, the raw cheese suffers a series of transformations that change its aspect, chemical composition, taking place the finalization of the specific taste and flavour.

Some researches were made regarding the dynamics of the biochemical processes that take place during the maturation of *Muscel* cream cheese.

MATERIALS AND METHODS

For the realization of the this study, *Muscel* cream cheese was analyzed from a physical-chemical point of view according the analysing methods like:

- determination of water content with the "Lacta" scale, % expressed;
- sodium chloride, the Mohr method, % expressed;
- total nitrogen (T.N.), the Kjeldhal method, % expressed;
- soluble nitrogen (S.N.), the Kjeldhal method, % expressed;
- total protein and soluble protein: was calculated by multiplying the total nitrogen, respectively the soluble nitrogen with the protein transformation coefficient of 6,38.

The content in total and soluble nitrogen / total nitrogen ratios represents the maturation degree of the cheese.

RESULTS AND DISCUSSIONS

The results of the performed analyses are presented in table 1.

Table 1. The variation of the physical - chemical characteristics of Muscel cream cheese during maturation

Characteristics	Maturation period, days				
	0	**30**	**45**	**60**	**75**
Humidity, %	48	44	40	39	34
NaCl, %	2.8	3.1	3.5	3.8	3.9
Acidity, ^{0}T	191	205	200	181	158
Total nitrogen, % (T. N.)	3.37	3.62	3.71	3.92	4.00
Soluble nitrogen, % (S.N.)	1.38	1.44	1.57	1.57	1.62
Total protein, %	21.50	23.00	23.66	25.00	25.52
Soluble protein, %	8.80	9.18	10.01	10.00	10.33
S.N. / T.N.	40.90	39.77	42.31	40.05	40.50

From the results, it can be noticed that the humidity decreases, the salt and the total nitrogen content increases and the soluble nitrogen presents a constant value during a 45-60 days maturation period.

It can be observed that between the salt concentration and the cream cheese humidity there is a reverse ratio, meaning that the salt degree increases once the humidity decreases. Figure 1 presents the physical - chemical characteristics variation of *Muscel* cream cheese during maturation.

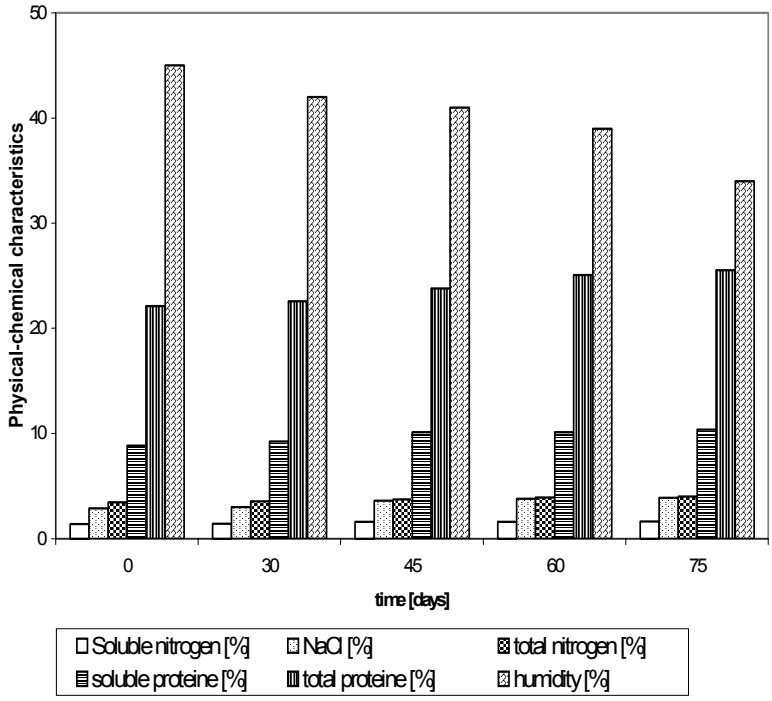

Figure 1. Physical - chemical characteristics of Muscel cream cheese variation during maturation

CONCLUSIONS

1. During *Muscel* cream cheese maturation variations of the main physical-chemical parameters are observed.
2. The most important modifications were recorded for humidity, salt concentration, total nitrogen and soluble nitrogen.
3. The modifications of the main components concentration, either through their increase or decrease, shows their implication during the maturation process, in this way helping at the definitivation of each sort of cheese specific characteristics.
4. *Muscel* cream cheese presented a high maturation degree.

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